

2012 ANNUAL FIRE WEATHER REPORT

NATIONAL WEATHER SERVICE FORECAST OFFICE FLAGSTAFF ARIZONA



(Flash Flood Over Gladiator Burn Scar Washed Away Crown King Road)

03 January 2013

MEMORANDUM FOR: W/WR1x3 – Roger Lamoni

FROM: Robert Bohlin/ FGZ FWX Program Manager

THROUGH: Brian Klimowski/ FGZ MIC

SUBJECT: Annual Fire Weather Report for 2012

1. OVERVIEW

The overall fire weather patterns in 2012 were extremely mild as compared to the previous 10 years. Evidence of how mild or severe our fire seasons are can be measured by how many Wild Fire spot forecasts were issued. The Flagstaff forecast office issued only 86 Wild Fire spot forecasts for all of 2012. This is the first year in at least 10 years that our office has issued less than 100 spot forecasts for Wild Fire activity.

Even with the mild fire weather season several large fires were reported across northern Arizona. The largest of these in our area was the Gladiator Fire which burned 16,240 acres of forest between May 13th and June 13th in the Bradshaw Mountains between the cities of Crown King and Prescott. Immediately after the fire we transitioned to Flash Flood operations and on July 14th a major rain event that produced 1 to 4 inches of rain over the burn area washed away Crown King Road (see cover picture).

Our Red Flag verification skill scores have fallen by ~10% as compared to previous years. After analyzing the data and weather patterns we have determined this decrease in our accuracy level was due to over warning in borderline fire weather patterns and not a reduced level of forecaster skill. Our probability of detection on Red Flag events remains above 90 % and this metric has not seen a large decrease. Probability of Detection means when Red Flag conditions occur we issue a warning prior to the event more than 90% of the time. Probability of detection is our most important statistic when it comes to notifying the customer base for potential extreme fire behavior.

Fire Weather Forecast Product Summary:

Spot Forecasts:	367	(574)
Fire Weather Watches:	172	(289)
Red Flag Warnings:	199	(332)

(Totals for 2011)

2. QUARTERLY WEATHER SUMMARY

JAN-MAR: In January, a persistent high pressure pattern caused above normal temperatures with below normal precipitation. By February, the amplification of the east Pacific ridge brought a northwesterly flow pattern to the Southwest causing low pressure systems to deliver glancing blows into northern Arizona. Weather conditions in February included near normal temperatures and light rain and snow amounts. In March, a high pressure pattern returned keeping weather conditions mostly warmer and drier than normal. One major storm moved through Arizona from March 17th to 19th this storm dropped a month's worth of rain and snow to bring up our monthly precipitation totals into the normal range.

APR-JUN: While May and June is typically our dry season in northern Arizona, this quarter was one of the driest on record under a stronger than normal high pressure pattern. The only exceptions to the warm dry pattern was with two storms in April that delivered near normal monthly precipitation totals to the northwestern Arizona region.

JUL-SEP: July heralded the arrival of the wet monsoon pattern with near to above average rainfall across northern Arizona through August. By September, high pressure built back in over Arizona and brought another month of above normal temperatures and below normal monthly rainfall.

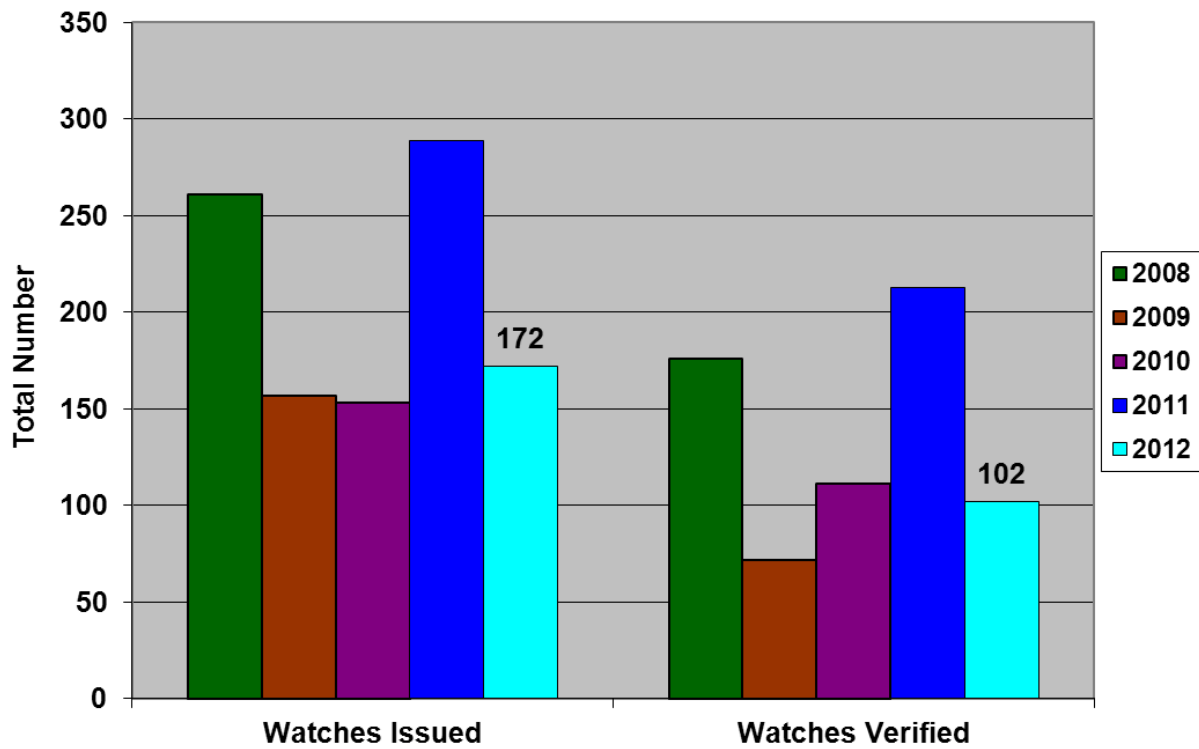
OCT-DEC: The fall to early winter period was unusually warm and dry with only a few weak storms bringing brief periods of light rain and high elevation snow accumulations. There were no Red Flag warnings issued for the fourth quarter which shows how mild the weather conditions were through the end of the year.

3. FIRE WEATHER WATCH AND RED FLAG WARNING VERIFICATION

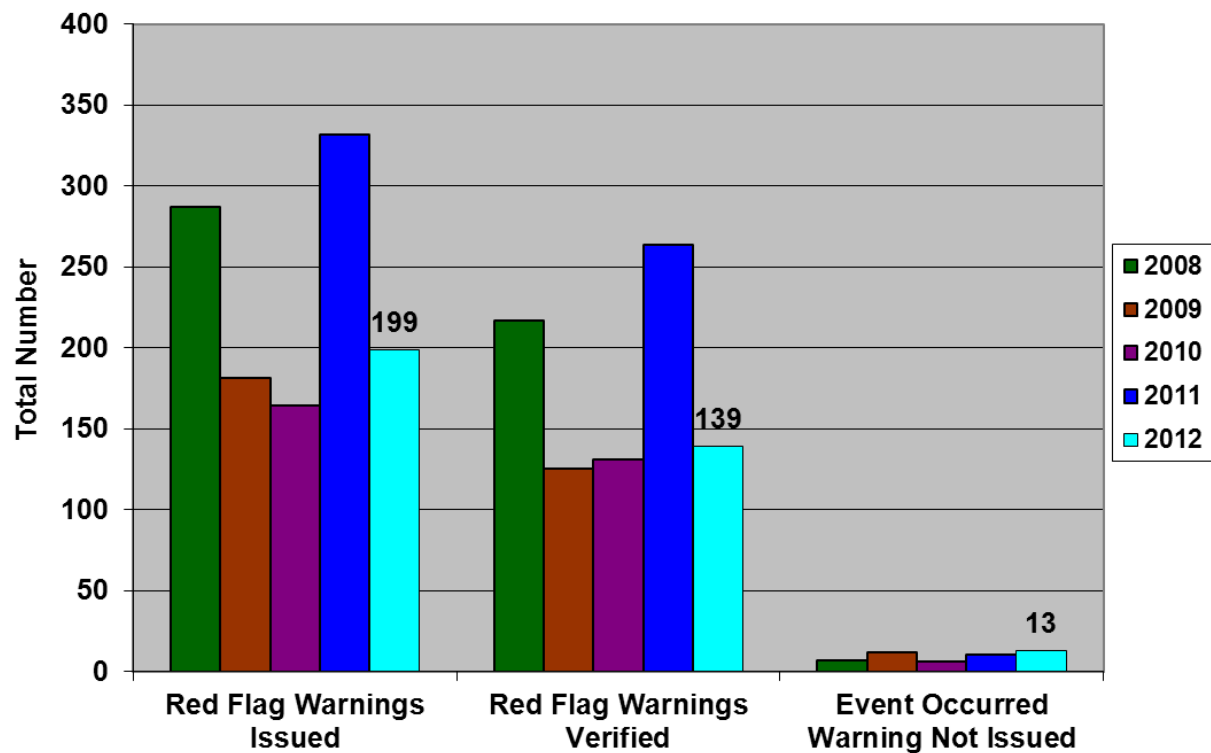
Watch and Warning Statistics for the 2012 Fire Season:

We had a relatively mild fire weather season this year with many marginal red flag warning events. The nature of this year's marginal fire weather season negatively impacted our office verification scores. Even with many challenging border line events, we almost met our regional and national warning goals for 2012 and remained within ~10% of previous years skill scores. While Red Flag verification scores have decreased this year, our Probability of Detection remains above 90%. Not bad considering we have 19 fire weather zones to forecast these conditions...many of these zones have only one or two observation points for verification purposes.

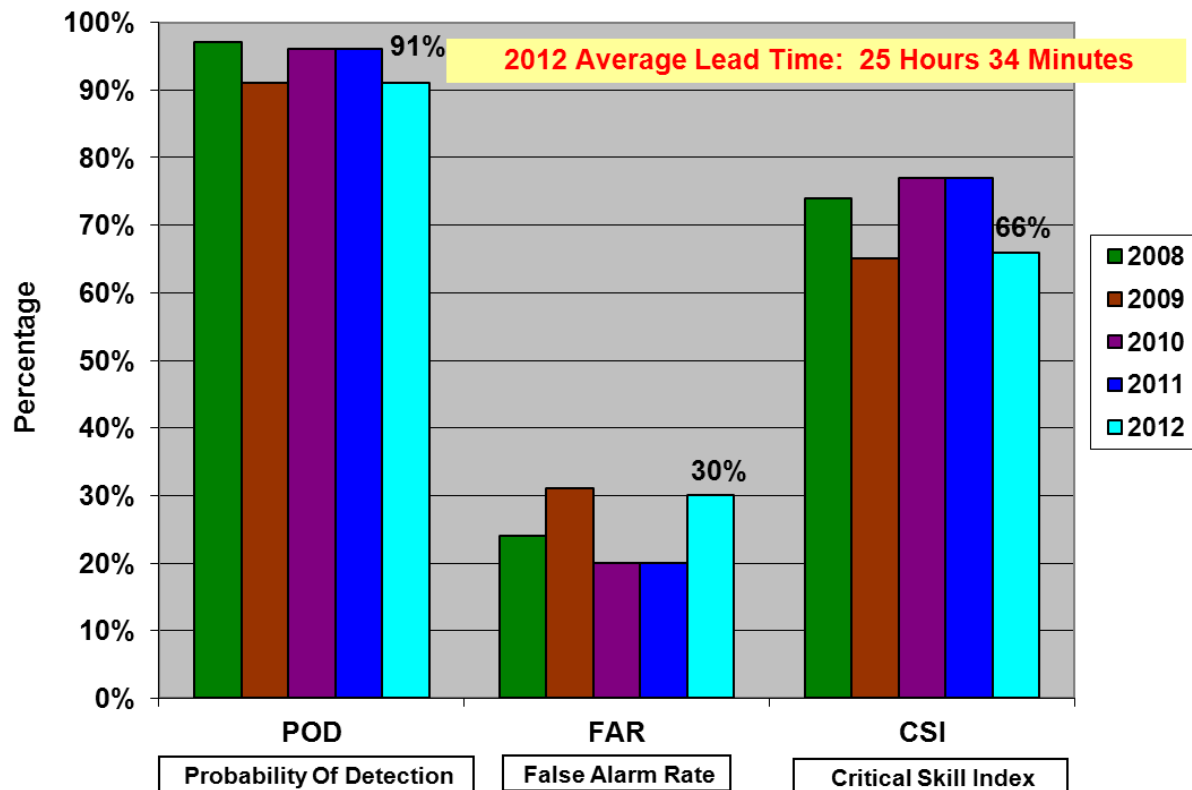
Fire Weather Watches



Red Flag Warnings

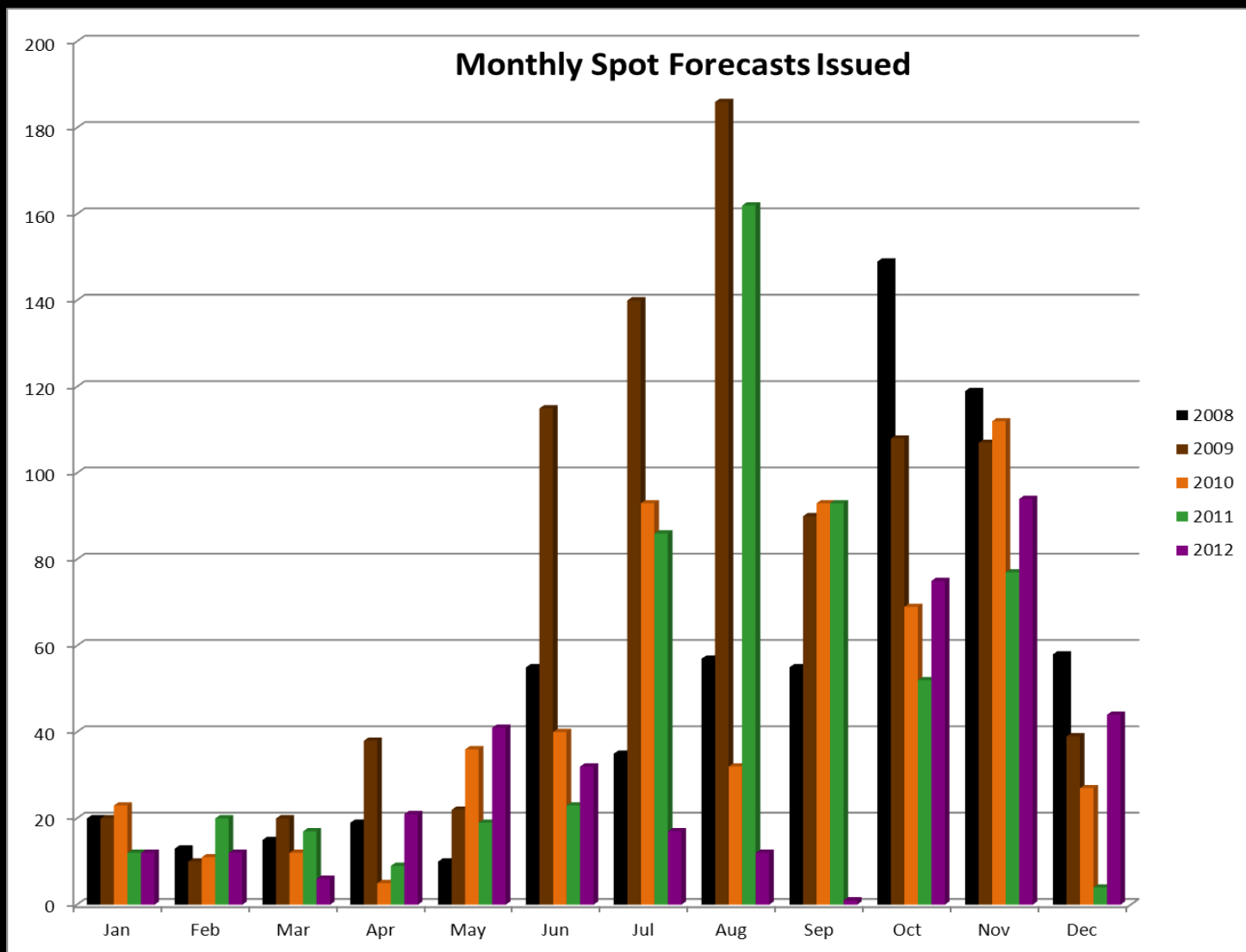


Red Flag Warning Verification



4. SPOT FORECAST SUMMARY

Wildfire forecasts:	100
Prescribed Burn forecasts:	265
Search & Rescue forecasts:	1
Hazmat	1
Total:	367



5. INCIDENT METEOROLOGIST DISPATCHES FOR 2012

Our IMET, Mark Stubblefield, provided on-site support to four fires:

Sunflower Fire (Tonto NF, AZ)	May 19-21	3 Days
Little Sand Fire (San Juan NF, CO)	May 27-Jun 4	9 Days
Seeley Fire (Manti-La Sal NF, UT)	Jun 28-Jul 13	16 Days
Mistake Peak, (Tonto NF, AZ)	Aug 14-19	6 Days

Our IMET, Tom Clemmons, provided on-site support to one fire:

Wenatchee Complex (Wenatchee NF) Sep 16-Oct-1 16 Days

Number of IMET Dispatches: 5

Number of IMET Dispatch days: 50

6. FIRE WEATHER TRAINING ASSIGNMENTS

Date	Course	Agency
2/20/12	Introduction to Wild Land Fire	Northern Arizona University
3/13-3/14	S-290	Coronado National Forest
3/15/12	S-590 Fire Behavior Analyst	
3/21/12	S-390	
4/3/12	S-390	
4/23-4/24	S-290	Northern Arizona University
9/20/12	Introduction to Wild Land Fire	

7. FIRE WEATHER OUTREACH MEETING SUMMARY

Date	Meeting Type	Agency
2/14	FMO Seasonal Update	Apache-Sitgreaves NF
2/27 -3/1	Southwest Fire Ecology Conference	Joint Fire Science Program
3/15	FMO Seasonal Update	Coconino NF
3/28/12	FMO Seasonal Update	Kaibab National Forest
4/5/12	FMO Seasonal Update	Prescott National Forest
5/10/12	Pre Fire Season Media Workshop	Kaibab/Coconino NF
11/28/12	FMO Leadership Meeting	Kaibab/Coconino NF
Monthly	Southwest Joint Fire Science Board Member	Joint Fire Science Program
Seasonal	Fire Restriction Coordination Calls	Kaibab/Coconino NF
Seasonal	ADEQ Prescribed Burn Coordination Calls	Arizona State Government